

## SURGERY

UNDER THE CHARGE OF

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The Principles of the Transfusion of Blood.—STANSFIELD (*Lancet*, i, 489) says that transfusion has been successfully employed in the treatment of various kinds of anemia and in the arrest of spontaneous hemorrhage. It has also yielded promising results in cases of serious infection and in certain toxemias. The ultimate prognosis in cases of anemia depends upon the power of reaction in the bone marrow, and this can only be adequately determined by observing the results of treatment. In cases of pernicious anemia both increased red-cell production and diminished red-cell destruction may result from the transfusion. The age of the patient, duration of the disease, and condition of the bone marrow as indicated in the peripheral blood have hitherto proved the best guides to the progress subsequent to the transfusion. The optimum dosage for transfusion is not yet determined, but it is probable that moderate repeated doses are preferable to large single doses in the treatment of chronic anemias. Very small doses may sometimes be of value. The donor should be a healthy adult with negative Wassermann reaction. The serum of the donor should not agglutinate the corpuscles of the patient, and the serum of the patient should not agglutinate the corpuscles of the donor. Agglutinins should be excluded by tests done immediately before the transfusion, and a single examination is not sufficient to establish the compatibility of the two bloods on all future occasions. If agglutinins are absent, hemolysins will also be absent. If there be great urgency and testing of the blood of the patient and donor be impracticable a small preliminary transfusion should be done half an hour before the main mass of blood is transfused, so that gross incompatibility may be recognized in time. Febrile reactions occur after about 25 per cent. of transfusions even though the bloods of donor and patient have been proved to be "compatible." Rigors occur in about 10 per cent. of the cases. It may prove desirable to investigate the blood of donor and patient with regard to factors of which we as yet know nothing, not merely for the sake of avoiding accidents, but also to determine whether a given donor is likely to afford the maximum of benefit in a particular case. The indirect method of transfusion, employing a glass received and sufficient sodium citrate to prevent coagulation of the transfused blood, is simple and involves no special dangers.

The Surgery of Amputation Stumps, Based on the Experience of 2000 Consecutive Cases.—HUGGINS (*Lancet*, 1917, i, 646) says that the surgery of amputations has entered a new era with the war. The old surgeons planned their operations essentially for speed and for the use

of peg limbs, and the classical operation for the foot belonged to an age when artificial joints had not been introduced. Primary amputations are performed to arrest infection and so to save life. Further operation, or radical treatment, is commonly necessary in England to prepare or improve, so that eventually a satisfactory limb may be fitted to it. The aim of this article is to elucidate this secondary treatment—that is, the preparation of stumps for artificial limbs. It is concluded that: No secondary amputations should be performed in cases of guillotine amputations until all edema has disappeared and skin extension has been employed for six weeks. Guillotine amputation stumps above the middle of the leg or thigh should never be shortened until healed unless it is decided that the knee-joint or hip must be sacrificed. When shortening has to be done the minimum amount of bone necessary for utilizing the joint above should always be borne in mind. A guillotine amputation may make a satisfactory stump in the leg and thigh, and almost always does in the forearm and arm without further re-amputation. Bone in a stump does not necrose unless infected. Delay in shortening stumps reduces the risk of infection, because infection is not in the wound only but in lymphatics leading from the wound. The amount of matting round the vessels leading to or from an amputation stump is very striking. Silk should never be used in operations on stumps. Amputations should be done by skin-flaps only, and no muscle should be used in the flap, the pad of fibrous tissue formed over the end of the bone from the organizing clot being all that is necessary. All nerves, and not merely the main nerves, must be shortened at the time of the amputation or reamputation. To prevent deformity, daily exercising the joints and the employment of splints and bandages are essential measures in preparing the stump for the artificial limb. A good Syme amputation leaves the patient with little disability, and amputations through the tarsus should never be done as a secondary amputation.

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**Results of Local Anesthesia in Prostatectomy.**—LEGEU (*Jour. d'Urolog.*, 1914-1915, vi (published in March, 1917), 601) reports his results with local anesthesia in 150 prostatectomies. He does the supra-pubic operation and gives 0.01 centigram of morphin preliminary to the operation. He injects into the bladder 40 to 50 c.c. of the unesthetic solution, which is a 1 to 200 novocain solution to which a small quantity of adrenalin is added. No further anesthetization of the bladder wall is employed. When the bladder is opened two fingers of the left hand are introduced, facing the pubis, and they guide the special needles, long and bent into different angles. With these a series of injections of 5 or 6 c.c. of the solution are made around the adenoma, between the prostate and rectum, and anterior to the urethra. The enucleation is then begun and is completed in about fifteen minutes. It has not been found necessary in any of his cases to give a general anesthetic. From 250 to 300 grams of the solution are employed, including the 40 grams injected into the bladder.

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**Scoliosis (Treatment).**—ABBOTT (*Am. Jour. Orthop. Surg.*, 1917, xv, 244) summarizes the effective treatment of mild cases of scoliosis as follows: The posture of the deformity must be known. The normal physiological position from which it develops must be recognized, and

the principles of treatment—overcorrection and fixation—must be applied. The overcorrection consists of forcing the spine by the use of a corset into the normal scoliotic posture diametrically opposed to the deformity. The corset must be made from a plaster-of-Paris model, with the overcorrection position exaggerated. The corset must exert pressure at those points only when force is needed to bend the spine into the overcorrected position. The corset will do more harm than good unless accurately adjusted. The corset must be made with sufficient room for the patient to move over into the overcorrected position after treatment has been in operation for a time unless this is accomplished at once. The efficiency of the corset is to be determined only by taking skiagrams through it and by noting the position of the spine. Fixation in overcorrection must be continued until the structures are so changed that they are symmetrical. Unless a perfect balance or equilibrium of the spine is obtained the deformity is not completely reduced. In many cases the corset treatment must be supplemented by exercise, both active and passive, in order to obtain overcorrection. The exercises are given within the corset and with it removed. Exercises are given only in the direction of overcorrection, or in a direction that will not cause the body to assume the deformed position. After fixation has been maintained long enough to cause the necessary changes in the structures the overcorrection corset must be discarded. A straight corset may be of benefit for a time after the overcorrection corset has been discarded, in order to accustom the patient to the straight position. The after-treatment is important, and exercises which are symmetrical, together with massage, are indicated. The deformity must be attacked in the same manner as club-foot, and the same sound surgical principles of treatment that are so effective in reducing that deformity, must be applied, namely, overcorrection and fixation.

**Pernicious Anemia, with Special Reference to Its Surgical Management.**—PERCY (*Surg., Gynec. and Obst.*, 1917, xxiv, 533) says that we do not know why a given case will fare better without than with the spleen. Up to the present time no constant and typical pathology in the spleen has been observed. The changes found are such as could have been caused by an infective process, the effects of which are evidenced by fibrosis throughout and a moderate increase of lymphocytes. Phagocytosis of degenerated red cells is much more pronounced. The pulp areas are at times greatly crowded and dilated by red cells in various stages of degeneration. It would seem then that there is some process going on in the spleen which causes an increased destruction of red cells. While there can be very little doubt as to the theory of pernicious anemia being a hemolytic disease, it is not certain as to where or in what manner the hyperhemolysis takes place. A splenectomy, even in some of the late cases of pernicious anemia, has been followed by cessation of the hyperhemolysis, indicating that the spleen is at least an important link in the chain necessary for the production of the disease. While no surgeon can say that a cure has resulted from splenectomy or other surgical procedures in any case of pernicious anemia, still there is enough clinical evidence to show that the benefits derived from surgery are more than by any other means. Surgical treatment means more than merely splenectomy. The routine emphasized by Percy is:

Multiple, massive transfusions of whole blood, eradication of all local foci of infection present, laparotomy for removal of the spleen and other tissues showing evidence of chronic infection. Even though no ultimate cures may result, it seems that the work is worth while; that it offers at least the quietest and most certain method of obtaining a remission of the disease, even in some of the extreme and long standing cases.

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## THERAPEUTICS

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**A Study of Ethylhydrocuprein (Optochin) in the Treatment of Acute Lobar Pneumonia.**—MOORE and CHESNY (*Arch. Int. Med.*, 1917, xix, 611), in a comprehensive article, discuss the action of optochin as observed experimentally and also clinically. As judged from a series of 32 cases, when optochin hydrochloride was given by mouth to patients suffering from acute lobar pneumonia in such amounts that they received at least 0.024 gm. per kilogram of body weight per twenty-four hours, and when the size and spacing of the individual doses were adequately regulated, a specific pneumococidal action appeared in their blood within a few hours, and could be maintained more or less constant for several days. In order to maintain the bactericidal action in the blood at a constant level, the intervals between the individual doses given by mouth should not ordinarily exceed about two and a half to three hours. When optochin is given by mouth according to such a scheme of dosage as outlined, the evidence points to some retention or accumulation in the blood of part of the drug absorbed. Administration of optochin hydrochloride by mouth appears to be more satisfactory than intramuscular administration. Further study of intramuscular administration appears to be desirable. Pneumococci not only *in vitro* but also in the human body in patients treated with optochin, may acquire the property of more or less complete resistance or "fastness" to the drug. Toxic symptoms, such as tinnitus, deafness, auralgia, or amaurosis (retinitis) may be observed in the use of the drug in man; they are generally transient. Retinitis, however, may result in more or less permanent impairment of vision.

**The Effects of Salicylates on Experimental Arthritis in Rabbits.**—FANTUS, SIMMONS and MOONE (*Arch. Int. Med.*, 1917, xix, 529) found that sodium salicylate, when used in a dose comparatively harmless to animal controls is decidedly detrimental and liable to be fatal to animals infected with the hemolytic streptococcus. The addition of sodium bicarbonate does not lessen much the harmfulness of the salicylate to infected rabbits. Sodium bicarbonate given alone is not